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ABSTRACT

The Paracollege at St. Olaf College is an experimental program in which students participate in a self-directed study curriculum where no grades are given and students work at their own pace. This document presents the results of a study designed to find out the varying degrees of general knowledge obtained by students in each program after 2 years of college. Results show that women performed better than men within each curricular program and Paracollege students performed better than regular St. Olaf students regardless of sex. The conclusions are based on a sample of 510 regular students and 575 Paracollege students taking the Humanities Area Test. (HS)

ED 069230

PROJECT II: Report 1

First Year Knowledge Acquisition In the Humanities

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Among the several dimensions of the longitudinal study of student development being conducted by the Office of Educational Research, that which has elicited most interest and concern from faculty is knowledge acquisition. It is, after all, commonly agreed that, whatever else happens to students in college, they ought to have gained more information in subject matter areas designated by institutional objectives than they would have had they never attended college. This report is the first in a series dealing with students' acquisition of knowledge in areas specified by the objectives of St. Olaf College. All the reports in the series will include comparisons of the test performance of students in Paracollege and in the regular St. Olaf curriculum.

The St. Olaf Bulletin states, "The purpose of the requirements set up for the Bachelor of Arts degree is to direct the student in planning a program that will provide for a sufficient distribution of studies to insure a broad and liberal education, a reasonable concentration to make possible the thorough mastery of at least one field of knowledge, and a content that will emphasize and be in harmony with the objectives of the College." [1] With that statement in mind, it was determined that measures of knowledge acquisition would be included in the research design at two levels and in several areas at each level. The "broad and liberal education" level testing would be administered in the first two years and would cover the broad areas of humanities, social sciences and natural sciences. Testing at the concentration level would occur at the end of the senior year and would be appropriate to the specific areas of concentration available to students. Since the research was to include a comparison of Paracollege with other St. Olaf students, choice of the testing instrument at the general education level was necessarily governed by the need to find measures that would be congruent with the College's objectives, but flexible enough to

test students from either program. Few such instruments are available in published, standardized form. Among those available, the Area Tests of the Educational Testing Service are, by far, the most widely used and highly reliable and valid.[2] This report consists of an analysis of the scores made on the Humanities Area Test by 197 randomly selected students in May of their freshman year. Included also are comparisons of scores made by 70 randomly selected students entering the freshman year in 1971.

General knowledge in the humanities was selected as the first area in which to measure knowledge acquisition because it is the area in which nearly all St. Olaf students have some formal academic experience during their freshman year. A check of registrar's and Paracollege tutor's records indicated, in fact, that on the average, St. Olaf freshmen spend about half their registered course time in the humanities study, regardless of whether they are in Paracollege or regular college program.[3] Authors of the Humanities Area Test describe the content of that test as including knowledge of literature, philosophy, art and music and acknowledge that the test is not intended to discriminate specialized competence in those fields.

> "Because there are many ways formal and informal, to gain this acquaintance [with the humanities] , the emphasis in the test is on the kind of information and the kind of ability that many students with active but nonspecialized interests in the humanities are likely to have acquired, possibly through independent reading or informal exposure to the arts and discussion of philosophical ideas."[4]

The content of the test is specific, then, but requires a broad and integrated understanding of humanities fields.

This level of ability and understanding required by the test was judged to be congruent with the general education objective of the College for the humanities.

The simplest form of the results of the Spring, 1970 testing are seen in Table 7.1 and they are encouraging and complimentary to both St. Olaf programs. Note that the mean score for the total group of freshmen is 535 which is just above the 80%tile on national norms for freshmen. Note also on Table 7.2 that the

TABLE 7.1

Mean Scores and Percentiles on the Humanities Area Test by Sex and Curriculum

	Men		Women		Total Sample	
	Score	Percentile	Score	Percentile	Score	Percentile
Regular St. Olaf Freshmen	510	74.5%ile	521	77.0%ile	515	75.7%ile
Paracollege Freshmen	575	89.0%ile	604	92.2%ile	593	91.3%ile
Total Sample	528	79.0%ile	542	82.4%ile	535	80.7%ile

TABLE 7.2

Percent Distributions of Students Scoring in Various Quintiles of National Norm Distributions for Freshmen on the Humanities Area Test

	Men		Women		Total Sample
	Reg. Coll.	Paracoll.	Reg. Coll.	Paracoll.	
Top Quintile (81-99%ile)	32.4%	56.5%	33.3%	78.6%	42.1%
2nd Quintile (61-80%ile)	23.5%	26.1%	35.9%	7.1%	26.4%
3rd Quintile (41-60%ile)	29.4%	13.0%	21.8%	10.7%	21.8%
4th Quintile (21-40%ile)	11.8%	4.3%	9.0%	3.6%	8.6%
5th Quintile (0-20%ile)	2.9%	---	---	---	1.0%

distribution of scores of St. Olaf students is heavily weighted in the upper quintiles of the national norms. In fact, only 10% of the St. Olaf sample performed below the 3rd quintile of the normal national distribution.

In light of the purposes of the research program, however, it is perhaps more interesting and significant that there are important group differences within the St. Olaf sample: more specifically, women performed better than men within each curricular program and Paracollege students performed better than regular St. Olaf students regardless of sex. In both cases the differences are statistically significant at the .025 level using a t-test. Referring back to Table 7.1, it may be seen that the mean score for Paracollege students was 593 (92%ile) and for regular college students 515 (72%ile).

It will be recalled that in the series of five reports describing the Class of 1974 at entrance, it was demonstrated that the Paracollege student body did not differ significantly from the total class on any of the conventional measures of academic aptitude or achievement orientation. (SAT-verbal, SAT-math and High school class rank). It seemed unlikely, therefore, that performance differences between students in the two programs on the Humanities Area Test could be accounted for in terms of ability differences at entrance. That is not to say, however, that there is no relationship between these abilities and performance on the H.A.T. In fact, Table 7.3 shows that the relationship is strong.

TABLE 7.3

Mean Scores on Humanities Area Test by Program, Sex and Verbal Ability Level

	Total	All students		Men		Women	
	Sample	Men	Women	Regular	Paracollege	Regular	Paracollege
High Verbal Ability: SAT-V=621 or higher	600	590	608	568	624	587	653
Middle Verbal Ability: SAT-V=531-620	525	537	516	534	547	501	602
Low Verbal Ability: SAT-V=530 or lower	467	445	490	447	430	482	520

Comparing the mean scores earned on the H.A.T. by students of high, middle and low verbal ability, it may be seen that students with high verbal aptitude are significantly more likely to perform well on the test. Note that when verbal ability is controlled, much of the difference between men's and women's performance is accounted for. However, with the exception of low ability males, the differences between Paracollege and regular college students remain significant at the .025 level.

Table 7.4 shows the results to be similar when achievement orientation is controlled. That is, when achievement orientation, measured by high school

TABLE 7.4

Mean Scores on the Humanities Area Test by Program, Sex and Achievement Orientation Level (H.S. Class Rank)

	Men		Women	
	Reg. Coll.	Paracoll.	Reg. Coll.	Paracoll.
High Achievement Orientation (Class rank 621 or higher)	529	602	537	623
Middle Achievement Orientation (Class rank 531-620)	481	566	490	567
Low Achievement Orientation (Class rank 531 and lower)	477	505	475	---

class rank normalized on the SAT scale, is held constant, it can be seen that there is a positive relationship between achievement and H.A.T performance. Again, however, this relationship does not account for test performance differences between Paracollege and regular college students.

Since neither of these conventional measures of academic ability could account for the group differences, it seemed that a plausible explanation might be found if some measure of the extent of students' interest in humanities study could be controlled. Though interest is a quality not easily measured, it was thought that some gross index of interest might be found in the proportion of time students devoted to study in humanities courses during the freshman year. Such a measure would of course, also include an index of formal exposure to humanities knowledge. A check of registrar's and Paracollege tutors' records showed that Paracollege students spent an average of 46% of their study time in humanities work, while students in the regular St. Olaf program spent an average of 56% of their registered course time in humanities fields.[5] Table 7.5 shows that this measure of "interest-exposure" was the first of the variables considered which did not bear a similar relationship to H.A.T performance for all the groups. That is, there was no relationship at all between the variables for the women and a curvilinear relationship for Paracollege men; but there was a strong, linear relationship for regular St. Olaf men. In other words, amount of

TABLE 7.5

Mean Scores on the Humanities Area Test by Program, Sex and Proportion of Study Devoted to the Humanities

	Men		Women	
	Reg. Coll.	Paracoll.	Reg. Coll.	Paracoll.
20-50%	475	572	512	599
50-75%	514	537	523	590
75-100%	589	628	534	600

time spent in humanities study, whether considered a measure of interest or exposure, was a significant factor in H.A.T. performance only for men in the regular St. Olaf program. Even so, that relationship did not account for score differences between students in the two programs. What it did provide, however, was a hint that among regular college men there are a number who, for one reason or another, avoid all but the minimum of humanities study during the freshman year and that their scores on the H.A.T. effect the mean for that group in a significant manner.

In the series of reports prepared last year by the Office of Educational Research describing freshmen at entrance, it was found that many of the attitude and opinion differences found to exist between Paracollege and regular St. Olaf students could be accounted for by controlling certain personality characteristics measured by the Omnibus Personality Inventory. More specifically, it was found that the Paracollege enrolled proportionately more students who scored high on what are called the Intellectual Disposition scales than did the regular St. Olaf program and enrolled practically no students who scored very low on those scales.[6] Since none of the variables considered thus far had clarified the sources of the differences in performance on the H.A.T. of students in the two programs, it was hypothesized that consideration of these personality variables might shed some light on the differences. Table 7.6 shows the mean scores on the H.A.T. for students of each sex in each program by high, middle and low Intellectual Disposition. Note that once again there is a distinct linear relationship between the Intellectual Disposition Category and performance on the H.A.T. There are still differences in the scores of Paracollege and regular St. Olaf

TABLE 7.6

Mean Scores on the Humanities Area Test by Program, Sex and Intellectual Disposition Level

	Total Sample	All Students Men	All Students Women	Men Regular	Men Paracoll.	Women Regular	Women Paracoll.
High Intellectual Disposition Categories	591	584	599	545	630	570	626
Middle Intellectual Disposition Categories	533	516	548	513	530	532	597
Low Intellectual Disposition Categories	496	466	509	471	380 (1 observation)	502	630 (2 observations)

students at each level. But in this case, the fact that Paracollege enrolls almost all middle and high IDC students while the regular St. Olaf curriculum enrolls nearly 40% low IDC students could conceivably explain much of the variance. In order to learn just how much of the variance in H.A.T. performance might be explained by the IDC concept, it was determined that another statistical technique--regression analysis--would be employed.

Regression analysis is a technique which allows researchers to enter several variables simultaneously into an equation in an effort to learn the relative strength of each in explaining the variance in scores on a variable of interest--in this case, performance on the Humanities Area Test. An important factor in regression analysis is the product moment correlation or correlation coefficient, which is an index of the strength of linear relationship between any two variables. A correlation coefficient may have a value ranging from +1 to -1 inclusive. If the coefficient value is near +1 or -1, the variables are said to be highly correlated, either positively or negatively. That is, in the case of a high positive correlation, as one variable increases the other also increases at a nearly equal unit rate. For example, height and weight in humans are positively correlated, but the age of an automobile and its trade in value are negatively correlated. If the correlation coefficient is near 0, then it is said there is no correlation on a random relationship between the variables.

Table 7.7 shows the strength of relationship (correlation coefficients) between H.A.T. scores and each of the variables considered thus far in this report.

TABLE 7.7

Correlation Coefficients with H.A.T. and other Variables for Various Groups

	Men		Women		All	All
	Reg Coll.	Paracoll.	Reg. Coll.	Paracoll.	Men	Women
SAT-V	.712	.812	.721	.674	.747	.671
CLASS RANK	.357	.525	.495	.517	.322	.466
Exposure to Humanities during Freshman Year at St. Olaf	.514	.075	.175	.061	.278	.023
IDC*	-.399	-.686	-.347	-.036	-.496	-.423

*IDC shows negative correlation because the highest IDC category is assigned the number 1 and the lowest the number 8. For example, the quality of a football team would be negatively correlated with its national ranking.

Note, first, that SAT-V scores are highly correlated with performance on the Humanities Area Test. One should expect, then, that knowing students' SAT verbal scores would explain a large part of the variance in scores on the H.A.T. using a regression equation. Note also that achievement orientation (class rank) bears a moderately strong relationship to H.A.T. performance, but that it is least strong for men in the regular St. Olaf program. And, as we have seen earlier, exposure to or interest in the humanities fields shows no relationship to H.A.T. performance except for men in the regular St. Olaf program. Once again, the suggestion is that, unlike others of the comparison groups, men in the regular St. Olaf program are characterized by a sizeable minority who enroll in few humanities courses and who score low on the H.A.T. And, finally, the Table shows that there is a moderate to strong relationship between Intellectual Disposition Category and H.A.T. performance for all except the Paracollege women. The implication in that exception is that, given the fact that nearly all Paracollege women fall into middle and high IDC groups, there are apparently other, possible, related variables which better predict their performance on the H.A.T.

In the regression analysis itself, the expectations from the correlation coefficients were upheld: That is, the SAT verbal ability measure proved to be the single most important predictor of H.A.T. scores for each of the

comparison groups, explaining 56% of the variance in scores for the men and 45% for the women. Holding verbal ability constant, however, there appeared interesting differences among the groups with regard to other variables that affected H.A.T. performance. For the men, Intellectual Disposition Category was the second best predictor, adding another 11% to the prediction accuracy. And the "interest-exposure" measure was also a statistically signficiant contributor to H.A.T performance, largely because of its function among men in the regular St. Olaf program. For women, however, only the SAT verbal measure emerged as a statistically significant contributor to H.A.T. performance, leaving about ½ of the variance in scores unexplained. Since on all of the variables except I.D.C. the distributions for Paracollege and regular St. Olaf students were nearly identical, the better performance of Paracollege students was left unexplained by these variables, even when combined in resgression analysis.[7] It would have been reasonable to assume that this unexplained variance was due to idiosyncratic differences among students and/or characteristics for which measures were not available. But since the research is aimed, in part, at assessing the peculiar impacts of Paracollege and because it would also be reasonable to assume that differences in program emphases could affect H.A.T. performance, it was decided that some effort would be made to determine how much, if any, of the test score differences could be ascribed to "something" about Paracollege membership itself.

In a second regression analysis, Paracollege membership was added as a dichotomous variable, and, indeed, it emerged as a statistically significant contributor to performance on H.A.T. In fact, for women Paracollege membership was second in importance only to SAT verbal score and alone added 15% to score prediction accuracy. For men, Paracollege membership was less important as a predictor than SAT-V, I.D.C. and "interest-exposure", but it still entered the regression sequence at a significant level. Thus Paracollege membership itself did explain a large portion of the previously unexplained variance in H.A.T. scores. Still, it was not clear that any or all of that portion could be accounted for in

terms of program superiority. That is, given that self-selection characteristics at entrance had been found to explain other attitudinal differences between Paracollege and regular St. Olaf students it would not have been surprising to learn that at least part of the H.A.T. score differences too could be explained in terms of entrance characteristics rather than by differences in academic programs.

The only really accurate way to determine what portion of the difference could be explained by program differences would have been to test the same students at entrance and at the end of the freshman year. Since that option was not available after the fact, it was decided that the test should be administered to random samples of Paracollege and regular St. Olaf students entering as freshmen in Fall, 1971. If there were no significant differences in H.A.T. scores at entrance, then presumably, differences found to exist at the end of the freshman year could be attributed primarily to program.

The Humanities Area Test was administered, then, to randomly selected samples of Paracollege and regular St. Olaf students entering as freshmen in Fall, 1971 (N=70). In order to check the representativeness of the sample for generalizing findings to the previous year's class, several comparison checks were set up. It was found that there were no signficiant differences between the total classes of 1974 and 1975 on measures of personality, attitudes, verbal ability and achievement orientation. Differences found on these measures between Paracollege and Regular St. Olaf students as separate groups were nearly identical with those found at entrance the previous year. [8] Therefore, cautious comparison of the two sets of H.A.T. scores seemed justified.

The results of the entrance testing on H.A.T. are seen in Table 7.8. There it can be clearly seen that group differences found at the end of the freshman year also existed at entrance to the freshman year. That is, even at entrance women performed better than men and Paracollege students better than regular St. Olaf students on the Humanities Area Test. Perhaps the most important observation one

TABLE 7.8

Mean Scores and Percentiles on Humanities Area Test Scores at Entrance by Sex and Curriculum

	Men		Women		Total Sample	
	Score	Percentile	Score	Percentile	Score	Percentile
Regular St. Olaf Freshmen (at entrance)	392	32%ile	490	69%ile	467	62%ile
Paracollege Freshmen (at entrance)	498	71%ile	559	85%ile	544	82%ile
Total Samples	481	66%ile	515	74%ile	500	72%ile

can make about these data is that, comparing with the end of the year mean scores on Table 7.1, it is clear that students in all four comparison groups made considerable headway in knowledge of the humanities fields during the freshman year. That is, all four groups had significantly higher mean scores at the end of the freshman year. Detailed analysis of change scores will have to wait, of course, until comparisons can be made of pre and post test scores earned by the same panel of students. Nevertheless, it is interesting to note that men in both programs apparently gained more knowledge in the humanities during the year than did their female counterparts, closing the "sex gap" at a very rapid rate. This would seem to clarify the earlier mentioned finding that exposure to humanities courses played a significant part in improving H.A.T. scores of men in the regular St. Olaf program. Rate of change differences between students of the same sex in the two programs are not significant, but again accurate analysis awaits the post-test results for the Class of 1975.

In any event, it appears that much of the difference found last Spring in the performance of Paracollege and regular St. Olaf students on the Humanities Area Test can be attributed to peculiar characteristics of Paracollege students at entrance. Just what those characteristics are and how they are related to knowledge of the humanities remained a puzzle, however. As a final effort to solve the puzzle, it was decided that a third regression analysis should be run on the Spring data, this time entering specific personality variables measured by the Omnibus Personality Inventory along with the conventional measures of

aptitude and achievement.[9] The results of that analysis were interesting and enlightening. Some hint of their implications are seen in Table 7.9 which displays the correlation coefficients of those variables found to be most closely related to performance on the H.A.T.

TABLE 7.9

Corellation Coefficients of Variables Found to be Most Significant

Men		Women	
Variables		Variables	
SAT-V	.747	SAT-V	.671
Thinking Introversion	.508	Thinking Introversion	.511
Estheticism	.474	Normalized Class Rank	.466
Practical Outlook	-.373	Practical Outlook	-.433

As seen previously, SAT verbal score bore the strongest relationship to test performance for students of both sexes. For men three personality variables, Thinking Introversion, Estheticism and Practical Outlook, also were found to be highly correlated with test performance, superceding all of the aptitude measures in importance. It is important to note that on all three of these variables the scores of Paracollege students had earlier been found to be significantly different from regular St. Olaf students and two of the scales are included in the composite I.D.C. concept considered earlier.[10] Briefly, these findings describe the type of male who performs well on the Humanities Area Test as one who has "a liking fo reflective thought, and an ... interest in a broad range of ideas found in . . . literature, art and philosophy." His "thinking is less dominated by immediate conditions" and he has "a high level of sensitivity and response to esthetic stimulation." He "finds greater appeal in ideas rather than in facts" and is less likely to "value material possessions and concrete accomplishments."[11] Referring back to the test authors' description (p. 2) of the kind of humanities knowledge examined by the H.A.T., it is not surprising that these personal qualities should be related to test performance. Neither is it surprising that Paracollege men

should perform better, since these personal qualities have been found to be significantly more prominent among Paracollege students.[11]

Among women, Table 7.9 indicates, Thinking Introversion also bears a strong relationship to H.A.T. performance. For them, however, achievement orientation, measured by high school class rank, replaces estheticism as a highly significant variable. In combination with the findings for men, these data seem to suppor the earlier suggestion that although intellectual disposition characteristics play a significant role in predicting men's scores on the H.A.T., a high achievement orientation overrides the importances of these characteristics among women. It may be that this difference would explain the significantly greater performance improvement of men during the freshman year as well.

In any case, the regression analysis which included personality variables as well as well as aptitude measures did account for substantially more of the variance in H.A.T. scores than did the regression using only aptitude measures. More specifically, the variables shown in Table 7.9 accounted for 72% of the variance in scores for men and 66% of the variance in scores for women. Furthermore, the personality variables found to play a significant role in that variance are all variables on which Paracollege students have been found to differ significantly from regular St. Olaf students when comparisons are made of those groups qua groups. Thus, much of the difference in the level of performance of Paracollege and regular St. Olaf students can probably be explained in terms of differing personality characteristics or styles at entrance. Whether <u>more</u> of the difference may be explained by academic program differences can not be determined until post-test results from the entering freshman samples are available.

In any event, it is clear that students in both programs gain substantial knowledge in the humanities during the freshman year and, given the limitations of the existing data, that neither program is obviously superior to the other in attaining that objective. Men apparently make greater progress in knowledge acquisition in the humanities during the first year, making a considerable "dent" in the head start women have made during high school. It is also clear that the Paracollege has succeeded in

attracting a type of student whose personal characteristics and interests lead him to have a greater than normal interest in and knowledge of the humanities fields, even at entrance to college. Whether this distinction will also apply to the social science and natural science fields will be seen in later reports of testing. And, finally, the analysis has also called attention to the limitations of conventional admissions-aptitude criteria for identifying important qualities related to academic functioning. Reports prepared last year by the Office of Educational Research demonstrated that personality characteristics measured at entrance were significantly better predictors of a whole range of students' attitudes, including educational goals and learning-style preferences, than all of the conventional criteria in combination. It was also demonstrated that the decision to apply to or enroll in the Paracollege was more obviously a function of personality characteristics than of any of the conventional aptitude criteria. And now knowledge acquisition too has been shown to be closely related to students personal characteristics. The obvious implication of these findings is that the personal development of students--changes in their attitudes, relationships and personality characteristics--is more closely related to their academic and intellectual functioning than has been formally recognized in the past. The next report to be prepared by this Office will deal with first year changes in students' personality characteristics and will attempt to clarify how academic performance affects and is affected by these changes.

Footnotes

1 The St. Olaf Bulletin. St. Olaf College, Northfield, Minnesota, April 1970. p. 29.

2 Further information about the content, validity and reliability of the Humanities Area Test is available from two sources. First, the test handbook, published by Educational Testing Service includes sample questions and data concerning validation and is available in the Office of Educational Research. Second, the most recent edition of Oscar Buras' Mental Measurements Handbook contains the editor's critique of the test and two critical reviews by noted scholars in humanities fields.

3 There was a significant difference between Paracollege and regular St. Olaf students as far as individual variation in time spent in humanities study was concerned. That is, while nearly all Paracollege students did at least 1/3 of their formal academic work in humanities and few did more than 2/3, regular St. Olaf students ranged from 1/9 to 100%. Of those students who spent little time on humanities work, most were either female nursing students or male students interested in natural science majors. The mean or average time spent in humanities time was nearly the same for both groups, however.

4 Examiner's Handbook. Educational Testing Service, Princeton, New Jersey, June, 1970.

5 It was, of course, difficult to find a measure of interest or exposure to humanities study which would be appropriate to students in both programs. For regular St. Olaf students, the index was arrived at by simply calculating the proportion of course units devoted to humanities study relative to total course units. For Paracollege students, faculty tutors made estimates of the proportion spent in humanities study relative to all work recorded in tutees' files. Obviously neither estimate takes into account the actual proportion of time spent on humanities, but the variation can be assumed to be similar for both groups.

6 See Farland, Ronnald W. and Stephen M. Bragg. "Personality Characteristics as Determinants of Attitudes and Opinions", Office of Educational Research, St. Olaf College, Northfield, Minnesota. June, 1971.

7 The fact that IDC was a significant predictor of H.A.T. scores for men but not for women led the researchers to question whether achievement orientation was clouding the importance of IDC for women. Data presented later in the report support that hypothesis. Nevertheless, it is clear that IDC alone could not account for all of the difference between the scores of Paracollege and regular St. Olaf students.

8 See Farland and Bragg. Reports 1 - 5: Descriptions of Freshmen at Entrance. Office of Educational Research. St. Olaf College. Northfield, Minnesota, Nov. 1970 - June 1971.

10* See Appendix B of Farland and Bragg "Personality Characteristics as Determinants of Attitudes and Opinions" for a more complete description of the IDC concept and for differing distributions of IDC categories anon Paracollege and regular St. Olaf students.

11* See Appendix A of this report for descriptions of the OPI scales found to be significant in this analysis. Descriptions of all the OPI scales may be found in Appendix A of Report 5 of the Office of Educational Research.

11* See Farland and Bragg. "Personality Characteristics as Determinants of Attitudes and Opinions."

*After sending the copy to press it was discovered that there had been an error in the numbering of footnotes. There is no footnote #9 and there are two footnotes numbered 11. The sequence of footnotes here corresponds to the order and numbering system found in the text.

APPENDIX A: Descriptions of Those OPI Scales Found to be Closely Related to Performance on the Humanities Area Test. (Reprinted from the OPI Manual).

Brief definitions of the pertinent scales of the OPI-Form F are presented blow, along with letter symbols (in parentheses) and the number of items in each scale. The measured characteristic is generally defined in terms of a description of high scorers; the logical opposite of this description would, in most cases, characterize low scorers.

1. Thinking Introversion (TI)--43 items: Persons scoring high on this measure are characterized by a liking for reflective thought and academic activities. They express interests in a broad range of ideas found in a variety of areas, such as literature, art, and philosophy. Their thinking is less dominated by immediate conditions and situations, or by commonly accepted ideas, than that of thinking extroverts (low scorers). Most extroverts show a preference for overt action and tend to evaluate ideas on the basis of their practical, immediate application, or to entirely reject or avoid dealing with ideas and abstractions.

2. Estheticism (Es)-24 items: High scorers endorse statements indicating diverse interests in artistic matters and activities and a high level of sensitivity and response to esthetic stimulation. The content of the statements in this scale extends beyond painting, sculpture, and music, and includes interests in literature and dramatics.

3. Practical Outlook (PO)--30 items: The high scorer on this measure is interested in practical, applied activities and tends to value material possessions and concrete accomplishments. The criterion most often used to evaluate ideas and things is one of immediate utility. Authoritarianism, conservatism, and non-intellectual interests are very frequent personality components of persons scoring above the average.